

## CLAIMS

1. A radio communication apparatus comprising:  
a plurality of antennas each of which transmits a  
plurality of transmission data items different from each  
5 other;

a switch that performs a switching operation for  
sequentially switching the transmission data items to  
be transmitted from each antenna; and

a converter that converts frequencies of the  
10 plurality of transmission data items to respective  
frequencies different from each other, thereby  
performing frequency conversion.

2. The radio communication apparatus according  
to claim 1, further comprising:

15 a storage section that stores a predetermined  
switching pattern,  
wherein said switch performs the switching operation  
according to the switching pattern.

3. The radio communication apparatus according  
20 to claim 2, wherein said storage section stores the  
switching pattern for performing the switching operation  
between antennas having low correlation with each other.

4. The radio communication apparatus according  
to claim 1, further comprising:

25 a counter that counts a predetermined time  
repeatedly,  
wherein said switch performs the switching operation at

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predetermined time intervals counted by said counter.

5. The radio communication apparatus according to claim 4, wherein said counter counts a predetermined time such that a switching pattern repeating period is  
5 equal to a time interleaving length.

6. The radio communication apparatus according to claim 1, wherein said switch performs the switching operation on the plurality of transmission data items subjected to the frequency conversion in said converter.

10 7. The radio communication apparatus according to claim 1, wherein said switch performs the switching operation on the plurality of transmission data items to be subjected to the frequency conversion in said converter.

15 8. The radio communication apparatus according to claim 1, wherein said converter has a plurality of synthesizers for each antenna, and switches a conversion frequency of a synthesizer while another synthesizer is performing the frequency conversion on transmission  
20 data.

9. A communication terminal apparatus mounted with a radio communication apparatus, said radio communication apparatus comprising:

a plurality of antennas each of which transmits a  
25 plurality of transmission data items different from each other;

a switch that performs a switching operation for

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sequentially switching the transmission data items to be transmitted from each antenna; and

a converter that converts frequencies of the plurality of transmission data items to respective  
5 frequencies different from each other, thereby performing frequency conversion.

10. A base station apparatus mounted with a radio communication apparatus, said radio communication apparatus comprising:

10 a plurality of antennas each of which transmits a plurality of transmission data items different from each other;

a switch that performs a switching operation for sequentially switching the transmission data items to  
15 be transmitted from each antenna; and

a converter that converts frequencies of the plurality of transmission data items to respective frequencies different from each other, thereby performing frequency conversion.

20 11. An antenna control method, comprising:

converting frequencies of a plurality of transmission data items different from each other to respective frequencies different from each other, thereby performing frequency conversion; and

25 assigning the plurality of transmission data items subjected to the frequency conversion sequentially to each of a plurality of antennas to transmit.

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12. An antenna control method, comprising:

assigning a plurality of transmission data items different from each other sequentially to each of a plurality of antennas;

5 converting frequencies of the plurality of assigned transmission data items to respective frequencies different from each other, thereby performing frequency conversion; and

transmitting the plurality of transmission data  
10 items subjected to the frequency conversion from respectively assigned antenna.

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